PATENT ABSTRACTS OF JAPAN

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(71)Applicant : **SHIN MEIWA IND CO LTD**

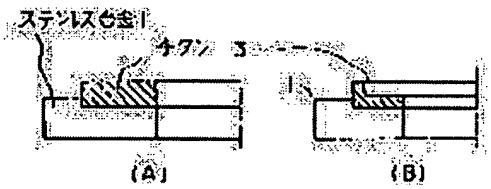
(72)Inventor : **YAMANE KENJI**

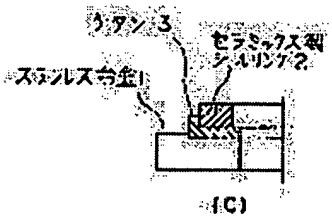
(54) COMPOSITE MATERIAL OF CERAMIC AND METAL

(57)Abstract:

PURPOSE: To produce a low-cost composite material, by a method wherein a ceramic base material is shrink-fit in the fastening part of a ceramic member, consisting of a metallic base material, which is low cost and easy to machine, through a metal having the low coefficient of expansion.

CONSTITUTION: A pure titanium ring 3 is shrink-fit in an alloy 1 made of stainless at about 220°C (as shown in fig. A). Thereafter, the titanium part is cut (as shown in fig. B), and a seal ring 2 made of ceramic is shrink-fit in the titanium part at about 220°C. In which case, fastening allowance of ceramic is about 0.04mm, and even if ceramic is cooled to a room temperature, it is prevented from break. Further, even if it is heated to 180°C, the pure titanium ring and the seal ring are prevented from separation. Thus, only a fastened part during shrink-fit of the metallic base material 1 forms a metal 3 which is difficult to machine and has the low coefficient of expansion, and other part forms a metal which is low cost and easy to machine, and this provides a low cost composite material in terms of both a material cost and easiness in machining.





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